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ABSTRACT

This study was designed to compare the psycholinguistic abilities of a randomly selected sample of 32 kindergarten children and 32 first grade children (with no kindergarten experience) and to analyze any discrepancy existing between psycholinguistic age (PLA) and chronological age (CA). Each of the kindergarten classrooms from which children were selected was staffed by a teacher and teacher assistant who had received a 6-week intensive training session emphasizing language development. Instruction was largely informal, although perception, language, and concept development were emphasized. A wide variety of materials was available for self-selection by children. Each of the eight first grade classrooms was staffed by one teacher who had received no special training. Instruction was highly structured for total group participation in a teacher dominated atmosphere. The rooms were usually void of materials that could be self-selected by students. Both groups were given the Illinois Test of Psycholinguistic Abilities (ITPA) at the end of 5 months of school. Analysis of variance of the data indicated that the kindergarten children scored significantly higher than the first graders on seven of the 10 subtests of the ITPA and that the discrepancy between CA and PLA was significantly less for kindergarten subjects than first grade subjects. (MG)

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PSYCHOLINGUISTIC BEHAVIORS OF BLACK, DISADVANTAGED RURAL CHILDREN

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SPECIAL APPRECIATION TO:

Mr. R. L. Fennell, Superintendent of Schools
Mr. E. R. Reeves, Director of Federal Programs
Miss Mary Harper, Director of Early Childhood Education, Williamsburg, County Schools

Within this decade, programs for young, disadvantaged children have been suggested, developed, implemented and tested as a first step in providing for children "learning environments" that are long overdue. The programs established have varied with respect to specific content and form but language development usually is seen as a focal point of instruction.

Studies which have used the Illinois Test of Psycholinguistic Abilities with black subjects have revealed language deficits in disadvantaged children. Ryckman (1966) pointed up that black lower class young children showed a substantial inferiority on all subtests as compared to black middle class children. Weaver and Weaver (1967) in a study with all deprived, black five year olds indicated that, although the experimental groups scored significantly higher than the control group in total ITPA language score, all children had significantly greater difficulties in the use of auditory and vocal channels as compared to their use of visual and motor channels. After six months of a preschool program for four and five year olds from a severely impoverished, black area, North (1968) found significant ($p < .01$) improvement in visual decoding and auditory vocal association tests and significant ($p < .05$) gains in vocal encoding, auditory decoding and total ITPA scores.

Williamsburg County, South Carolina is a predominantly rural county whose economy is based primarily on agriculture. The public school system is the largest employer in the county. According to a rural poverty status

index developed by the United States Department of Agriculture, Williamsburg County ranked seventeenth from the lowest of the 3,081 counties in the United States. The average family income in 1960 was $1,631 which was the lowest of any county in South Carolina and 68.3 percent of the families had incomes of less than $3,000. In the total population over twenty-five years of age, 31.3 per cent have completed less than five years of formal education; approximately 78 per cent of the population is black. There are eight of the thirteen elementary schools in the county classified as high priority schools.[1] Likewise, seven high schools have high priority status. In the spring of 1968, only 12 per cent of the 535 graduates entered post high school programs. The United States average was 75.9 per cent and the South Carolina average was 57.9 per cent.

Administrative personnel in the school system accepted the responsibility of chief change-agent in breaking the socio-economic-educational poverty cycle in Williamsburg County. The problems of low motivation, retention, underachievement, illiteracy, and drop out which lead to eventual unemployment and the out-migration of uneducated, unskilled youth were apparent. The County Superintendent of Education together with his constituents determined that the educational system had to change and Early Childhood Education was identified as the area for the greatest concentration of effort. In order to insure a higher quality of education, training and retraining of the instructional staff was mandatory and was begun.

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[1]High priority is based primarily on the low economic status of majority of the students.

Funded under Title I, twenty-two kindergartens for five year olds were placed in the eight high priority elementary schools in the 1968-69 year. Each kindergarten was staffed by a team of a teacher and a teacher assistant. Prior to opening of the 1968-69 school year, a six weeks intensive training session was held for the instructional staff. The forty-four teachers and assistants and ten substitutes spent five hours a day for the six weeks exp;oring curriculum approaches and appropriate learning materials for young children. Specialists from all academic areas worked with the staff. Particular emphasis on language development schemes was stressed. In-service training throughout the year for administrators and kindergarten personnel included a full day once a month with two or more specialists, regular classroom supervision by county staff members and local administrators and video-taped classroom sessions followed by conferences.[1]

The kindergarten classrooms were staffed by two adults and were designed physically for learning centers. The rooms were well-equipped with a vast array of materials for educational experiences for young children. Instruction was largely informal with the exception of short periods with small numbered groups in a modified Bereiter approach to language. Later during the year the Goldberg PLC lessons were used.[2] However, each day was filled with schemes for enhancing language and providing children the opportunity of commerce with equipment and materials that could expand their horizons and could build more meaningful background that seems to be a requisite for language production.

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[1]Information taken from COP proposal, 1969, Williamsburg County, South Carolina.

[2]Perception, Language and Cognition, materials were supplied by Dr. Jane Raph, Rutgers University through permission from Dr. Miriam Goldberg, Teachers College, Columbia University

The first grade classrooms were staffed by one adult and physically were equipped with desks in rows or tables and chairs. For the most part, the rooms were void of materials and equipment that could be self selected by children. The primary learning tools were reading series materials, paper and writing tools. The instruction was highly structured for total group participation in a teacher dominated atmosphere. No special training was held with the first grade teachers.

From the eight high priority elementary schools, a randomly selected sample of thirty-two kindergarten children and a randomly selected sample of thirty-two first grade children were administered the Illinois Test of Psycholinguistic Abilities at the end of five months of school.

The problem was to determine differences and likenesses of the psycholinguistic abilities of a selected sample of subjects enrolled in kindergarten and first grade from eight poverty schools and to analyze the discrepancy, if any, existing between psycholinguistic age (PLA) and chronological age (CA).

The data[1] were subjected to multivariate analysis of variance first and in the event of a significant F, plans were made to use univariate analysis of variance on each of the ten subtest scores.

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[1]The data were analyzed at the University of South Carolina Computer Center. The Multivariate Analysis of Variance program from the University of Miami, Biometric Laboratory was used.

Findings:

Comparisons of subjects who had attended five months of kindergarten with first grade subjects who had no kindergarten experience but had received five months of first grade instruction yielded significant differences on subtest scaled scores of the ITPA. The group means and standard deviations with respect to the ten subtest scaled scores for kindergarten and first grade subjects are given in Table 1.

Table 1

Group Means and Standard Deviations for Kindergarten and First Grade Subjects on the Ten Subtest Scaled Scores of the ITPA.

Subtests of ITPA	Kindergarten Subjects (N=32)		First Grade Subjects (N=32)	
	Mean	S. D.	Mean	S. D.
Auditory Reception	29.469	6.324	25.938	6.101
Visual Reception	31.875	5.314	28.719	6.356
Visual Memory	22.344	6.689	22.563	11.551
Auditory Association	24.969	6.926	17.125	8.412
Auditory Memory	35.125	8.918	34.469	8.351
Visual Association	25.625	7.991	22.938	11.118
Visual Closure	33.063	8.736	26.844	7.301
Verbal Expression	31.094	6.018	25.781	4.286
Grammatic Closure	23.906	6.270	17.625	5.610
Manual Expression	33.094	4.336	28.844	5.413

The multivariate analysis of variance test (MANOVA) yielded an F value of 3.522. Significant differences existed between the kindergarten and first grade subjects on the ten subtest scaled scores of the ITPA ($P < .001$).

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The results of the univariate analysis of variance performed following MANOVA indicated that kindergarten subjects scored significantly higher on seven of the ten subtests. Tables 2 - 11 show the results of the individual subtests of the ITPA.

Table 2

Analysis of Variance for Auditory Reception Scaled Scores on the ITPA for Kindergarten and First Grade Subjects

Source of Variance	S. S.	df	M. S.	F	P
Among Groups	199.516	1	199.516		
Within Groups	2393.844	62	38.610	5.167	< .02
Total	2593.360	63			

Table 3

Analysis of Variance for Visual Reception Scaled Scores on the TTPA for Kindergarten and First Grade Subjects

Source of Variance	S. S.	df	M. S.	F	P
Among Groups	159.391	1	159.391		
Within Groups	2127.969	62	34.322	4.644	< .03
Total	2287.360	63			

Table 4

Analysis of Variance for Visual Memory Scaled Scores on the ITPA for Kindergarten and First Grade Subjects

Source of Variance	S. S.	df	M. S.	F	P
Among Groups	.766	1	.766		
Within Groups	5523.094	62	89.082	.009	< .92
Total	5523.960	63			

Table 5

Analysis of Variance for Auditory Association Scaled Scores on the ITPA for Kindergarten and First Grade Subjects

Source of Variance	S. S.	df	M. S.	F	P
Among Groups	984.391	1	984.391		
Within Groups	3680.469	62	59.362	16.583	< .001
Total	4664.860	63			

Table 6

Analysis of Variance for Auditory Memory Scaled Scores on the ITPA for Kindergarten and First Grade Subjects

Source of Variance	S. S.	df	M. S.	F	P
Among Groups	6.891	1	6.891		
Within Groups	4627.469	62	74.637	.092	< .76
Total	4634.360	63			

Table 7

Analysis of Variance for Visual Association Scaled Scores on the ITPA for Kindergarten and First Grade Subjects

Source of Variance	S. S.	df	M. S.	F	P
Among Groups	115.563	1	115.563		
Within Groups	5811.375	62	93.732	1.233	< .27
Total	5926.938	63			

Table 8

Analysis of Variance for Visual Closure Scaled Scores on the ITPA for Kindergarten and First Grade Subjects

Source of Variance	S. S.	df	M. S.	F	P
Among Groups	618.766	1	618.766	9.548	<.003
Within Groups	4018.094	62	64.803		
Total	4636.860	63			

Table 9

Analysis of Variance for Verbal Expression Scaled Scores on the ITPA for Kindergarten and First Grade Subjects

Source of Variance	S. S.	df	M. S.	F	P
Among Groups	451.563	1	451.563		
Within Groups	1692.188	62	27.293	16.545	<.001
Total	2143.751	63			

Table 10

Analysis of Variance for Grammatic Closure Scaled Scores on the ITPA for Kindergarten and First Grade Subjects

Source of Variance	S. S.	df	M. S.	F	P
Among Groups	631.266	1	631.266		
Within Groups	2194.219	62	35.391	17.837	< .001
Total	2825.485	63			

Analysis of Variance for Manual Expression Scales Scores on the ITPA for Kindergarten and First Grade Subjects

Source of Variance	S. S.	df	M. S.	F	P
Among Groups	289.000	1	289.000		
Within Groups	1490.938	62	24.047	12.018	$< .001$
Total	1779.938	63			

Comparisons of the two groups indicated that the kindergarten subjects scored significantly higher on seven of the ten subtests of the ITPA. The only subtests which yielded no significant differences between the two groups were visual memory, auditory memory, and visual association. All of the other seven subtest scores were statistically different (see Tables 2-11).

Table 12 indicates the analysis of variance comparison of the difference between Chronological Age (CA) and Psycholinguistic Age (PLA) as measured by the ITPA for the two groups.

Table 12

Analysis of Varience for Discrepancy Between CA and PLA on the ITPA for Kindergarten and First Grade Subjects

Source of Variance	S. S.	df	M. S.	F	P
Between Groups	1387.56	1	1387.56		
Within Groups	5126.88	62	170.90	8.12	$< .01$
Total	6514.44	63			

The discrepancy between Chronological Age (CA) and Psycholinguistic Age (PLA) as measured by the ITPA was significantly less for kindergarten subjects than first grade subjects. While the mean discrepancy for kindergarten subjects was 13.69 months, the mean discrepancy for first grade subjects was 23.00 months.

Discussion of the Findings:

The data indicate that disadvantaged, rural black children who had five months of kindergarten instruction scored significantly higher on seven of the ten subtests of the ITPA than did comparable children who had no kindergarten experience but had received five months of first grade instruction.

When scores for the kindergarten subjects were studied with respect to the norms established for the ITPA, five of the ten subtest scores were within a six point standard deviation from the mean of thirty-six. According to the ITPA Manual (Kirk, 1968) eighty per cent of average children score within this range. The auditory reception mean score was 29.469 which only slightly differed from the six point difference score of average. Of the four subtest scores which indicated severe deficit, it is of interest to note that two were subtests which yielded no significant differences between the kindergarten and first grade subjects.

When scores for the first grade subjects were examined, only one subtest score fell within the plus or minus six point range. No significant difference between the kindergarten and first grade subjects were noted on that subtest (auditory memory). The mean scores on three subtests (visual reception, visual closure, and manual expression) deviated from the mean by seven, eight, or nine points. The ITPA Manual suggests that such

differences are considered bordering discrepancies and need other indications before diagnostic decisions are made. All other six subtest scores for first grade subjects point up substantial deficits.

The discrepancy score between Chronological Age and Psycholinguistic Age as measured by the ITPA was significantly less ($p < .01$) for the kindergarten subjects. The kindergarten subjects were behind in PLA but not as severely as the first grade subjects. The mean discrepancy score showed kindergarten subjects' PLA differing from their CA by 13.69 months. First grade subjects' mean discrepancy score between PLA and CA was 23.00 months.

Some research (Deutsch, 1965, Kennedy, 1969) has pointed out that the gap between age or grade level and academic performance grows larger for disadvantaged children when compared to middle-class children and the longer the disadvantaged child stays in school in the usual instructional setting the greater the discrepancy between age or grade level and achievement. The results found herein may merely be in support of previous findings; however, it would be premature to draw a definitive conclusion now. Under any given set of expectations, the six (plus) year old, disadvantaged, first grade subjects should have scored higher than the five (plus) year old, disadvantaged kindergarten pupils. The sixty four subjects used will be followed for the next three years and the results of the continued investigations will have to be analyzed.

The findings do suggest that five year old children who have had five months of an enriched kindergarten environment with two adults in

each class and specific and intense instruction in perception, language, and concept development achieve significantly higher scores on the ITPA than children at least six years of age who have had five months of first grade instruction by one teacher.

The data do seem to indicate that kindergarten experience and instruction can lay the foundation for continued growth in achievement for rural, disadvantaged children. The specific advantages of the school environment of the kindergartens involved in this study are worthy of consideration in planning continuing instruction throughout the years of early childhood education. The apparent discrepancy in language abilities among the children and insight of the county staff, among others, have resulted in a massive coordinated effort to change the entire former primary grade structure including teacher behaviors, graded expectations, physical environments, and pupil behaviors.

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